

Understanding the effects of Renewable Energy investments in development

Socio-economic Benefits of Renewable Energy in MENA

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On behalf of:



Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

On behalf of:



Federal Ministry for Economic Cooperation and Development

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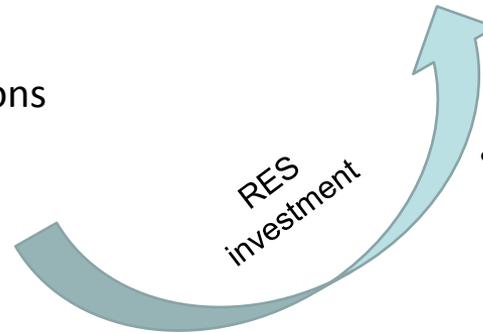
IRENA

International Renewable Energy Agency

RES Deployment



- ✓ Avoided local and global emissions
- ✓ Improved energy access
- ✓ Technology knowhow transfer
- ✓ Price effects
- ✓ Economic activity
- ✓ Job creation
- ✓ Energy security
- ✓ Reduction of fossil fuel imports
- ✓ Decline energy technology costs
- ✓



Development process



- Benefits from RES should not be taken for granted (Benefits & Costs) –need to identify, quantify and put in place required measures to foster benefits and minimize potential effects
- The sign and the magnitude of the effects and thus the effect on the development process of the host country depend on a **large range of interrelated factors**

What is the role played by RES FDI in the development of host countries?



- How do they relate? Which and how are their various factors/mechanisms and processes involved interrelated?
- How do the different economic structures, business models, civil society engagement modes, companies practices, institutional frameworks, laws, geopolitical contexts ... affect the sign and magnitude of the effects?
- How can we further foster the positive effects of RES FDI to DEV process?
- What recommendations can we derive from best and worst practices?

1-Background of the FDI-D framework

- Most of the literature and empirical studies focus on specific impacts (growth technological spillovers, exports, employment, productivity, etc) in specific time periods, contexts.
- Far from conclusive: need for a second generation of studies on FDI and development (Moran 2011). FDI-D links hidden in a “black box” (Narula and Dunning 2010, Zhan and Mirza, 2012).

- Must know **“how” not only “if or under what conditions”** development happened as a result of a specific foreign investment project.
- Need to accumulate knowledge and comparing results → need a common analytical framework (same variables, same indicators)

FDI-I Analytical framework

Variables from the development literature

Factors: Those elements that define an investment project which also include the company undertaking the investment as well as the socio-economic structure of the host country (*eg: required labor intensity of the project, host country availability of skilled labor, etc*)

Mechanisms: Sequence of events which take place as a result of a the combination of certain factors (*eg: improvement of labor conditions*)

Processess: Channels through which the investment positively affects the development process of the host country as a result of a combination of various mechanisms (*eg: improved labor conditions positively affect labor structure and thus, host countries´ development process*).

FACTORS

ECONOM. STRUCTURE

1. Local market competition
2. Local competitiveness
3. Local provisioning
4. Internal market size
5. Trade openness
6. Human capital
7. Labor demand
8. Physical infrastructures

INSTITUT. FRAME.

9. Transparency and governance
10. Labor/environmental legislation
11. Fiscal pressure and progressivity
12. Civil society organization
13. Productive sector support
14. Norms on universal coverage

INVESTMENT PROJECT

15. Training policy
16. Wage policy
17. Community relations policy
18. Environmental policy
19. Greenfield/ Merge and acquisition
20. Basic/strategic production
21. Local assets dependency
22. Inward/outward orientation
23. Capital/Labor/Nat Res. Intensity
24. Dependency on interm. goods
25. Technological position
26. Clean technologies

MECHANISMS

EMPLOYMENT

1. Direct employment
2. Indirect employment
3. Labor conditions improvement
4. Qualified employment
5. Rotation of qualified employees
6. Labor inclusion

ACTIVITY

7. Change in market competition
8. Crowding in
9. Change in overall competitiveness
10. Investment stock
11. Productive linkages
12. Product innovation

SPILLOVERS

13. Clean technologies absorption
14. *Spillover* by subcontracting
15. *Spillover* by training
16. *Spillover* by new products
17. *Spillover* by joint venture

B.P.

18. Net exports
19. Net financial inflows

OTHER.

20. Social dialogue
21. Public expenditure
22. Sustainable management

PROCESSES

Structural change

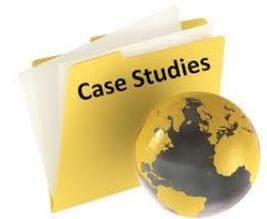
Contribution to public goods

Goods and services provisioning

Changes in labor structure

Balance of payment equilibrium

Application of the FDI-D framework



- REI has already developed and applied the framework to 12 case studies (investment projects) in 5 countries (Dominican Republic, Brazil, Bolivia, Morocco, Algeria)
- Examples

Country	Sector	Most relevant factors	Development effects	Development process
Morocco	Almond farming	Outward orientation, technological position;	Net exports Spillovers by joint ventures	BoP equilibrium Structural change
Brazil	Automobile	Merge & acquisition; technological position; productive sector support	Spillovers by subcontracting; Productive linkages	Structural change

Need to adapt the FDI-D framework to the energy sector – **Why?**



- **Large sums** of FDI in RES projects are expected worldwide.
- **Particularities** of the energy sector – need to fine-tune the analytical framework to account for energy sector specific particularities (eg:, environmental and socio-economic life cycle effects, wfe nex, BP, etc)
- **Tailored** to assess both renewables as well as conventional energy technology (grid/off grid) projects and consider different types of companies, countries, policies, business models, involved actors, etc.
- Through the application of the framework to one or various case studies, be able to derive **relevant, concrete and action oriented recommendations**

Added value (i)



- **Comprehensive** analytical framework
- **Opens the “black box”** of DEV-FDI in the energy sector
- **Quantitative & Qualitative** research methods (literature review –data and scientific report analysis-, questionnaires, in depth interviews, semi-structured interviews, focus groups, quantitative methods, etc) – Field work required!
- Based on strong and comprehensive **stakeholder consultation**.
- Sheds some light to the **knowledge gaps and research needs** – can lead to further in depth analysis/studies (I-O, LCA, econometric analysis, etc).

Added value (ii)

- Derive results and recommendations for **specific case studies**.
- From multiple case studies analysis, it is possible to compare the development outcomes from different combinations – **general results**
- Analysis at the country level, regional level, technology level, etc.
- Useful for:
 - Governments (policy recommendations to maximize positive effects)
 - Private Sector (identify best practices – CSR / advocacy)
 - Civil society (accountability)
- Relevant results to **advocate in favor of RES** investments.



Next steps

- Adapt the analytical framework (research & experts consultation) to the energy sector (EFDI-D)
- Apply the EFDI-D to a RES investment case study (and alternative).
- Enlarge the analysis with various case studies (technologies, countries, governments, companies, geopolitical contexts, etc) in a region (Latin America, MENA, etc).
- Derive case study specific recommendations and general ones

Thank you!

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Examples

- Local producers (F3)
- Public support (F13)
- Technical know how (M16)
- Job creation (M1)
- Export opportunities (M18)
- Technological dependence (M16)
- Impacts on water and land (M22)
- Regional electricity availability (P2)
- High-quality jobs (M4)
- Traditional livelihoods of vulnerable people (M22)
- Civil society engagement (F12)
- Sales and new products (M12)
- Job creation (M1)
- Increased local tax base (M21)
- Opportunities to export to international markets (M13)
- Spillover effects (M14-17)
- Business linkages (M11)
- Public Support strategy (F13)

Development process: Improvement of macroeconomic and microeconomic factors relating to the structure of a developing economy which can lead to effective domestic and international growth.

Besides economic growth, development also implies improving a wide range of factors like health, education, working conditions, sustainable resource management, domestic and international policies and market conditions which, all together, leads to a improvement of the quality of life of its citizens.

The above mentioned factors related are in interrelated.

Foreign direct investments can affect the development process of the host countries in various manners and depend on a wide range of factors.